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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,697	10/10/2001	Minsheng Wang	TI-29407	9201
23494	7590	08/31/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			MAI, TAN V	
			ART UNIT	PAPER NUMBER
			2124	

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/975,697	<b>Applicant(s)</b> WANG ET AL.	
	<b>Examiner</b> Tan V Mai	<b>Art Unit</b> 2124	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/10/01 (Pre. Amendt.).
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2124

1. The abstract of the disclosure is objected to because the Abstract contains the undefined acronym "FIR". All such acronyms should be defined at the instance of their first use within the Abstract. Correction is required. See MPEP § 608.01(b).
2. The drawings are objected to because the label "PRIOR ART" in Fig. 3 should be removed. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The disclosure is objected to because of the following informalities:  
Page 7, line 4; the phrase "gates a does an N-bit" is NOT understood.  
Appropriate correction is required.
4. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per independent claim 1, the claim is incomplete in that it recites only a portion of the methodology required for the digital filter to become operational, i.e., it omits essential elements and/or steps. See MPEP 2172.01. It is noted that the output of the filter is a sum of products result. The claim fails to recite the "multiplication" between the input / delayed inputs with the coefficients.

Art Unit: 2124

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Fig. 2 (Prior Art) in view of Christopher.

As per independent claim 1, Applicants' Fig. 2 shows a first & a second plurality of delay components and a first & a second plurality of adders. It is noted that Applicants' Fig. 2 does not specifically detail the claimed "each adder **couplable alternately to a different delay component** .."; however, the feature is old and well known in the filter art. For example, Christopher discloses, e.g., see Fig. 4, a FIR filter having the feature, i.e., "adders are interconnected by delay stages Dsp (Dhp)" (col. 4, lines 8-38). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Christopher in Applicants' Fig. 2, thereby making the claimed invention, because the proposed device is a FIR filter capable of performing the functions as claimed.

As dependent claim 2-10, Applicants' Fig. 2 shows the claimed features.

As dependent claim 11-16, a portion of Applicants' Fig. 2 shows the claimed feature.

7. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Fig. 2 (Prior Art) in view of Holden et al.

Art Unit: 2124

As per independent claim 1, Applicants' Fig. 2 shows a first & a second plurality of delay components and a first & a second plurality of adders. It is noted that Applicants' Fig. 2 does not specifically detail the claimed "each adder **couplable alternately to a different delay component** .."; however, the feature is old and well known in the filter art. For example, Holden et al disclose, e.g., see Fig. 3, a multi-channel FIR filter having the feature, i.e., "adders (46, 52 & 56) are interconnected to other elements via multiplexing operation. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Holden et al in Applicants' Fig. 2, thereby making the claimed invention, because the proposed device is a FIR filter capable of performing the functions as claimed.

As dependent claim 2-10, Applicants' Fig. 2 shows the claimed features.

As dependent claim 11-16, a portion of Applicants' Fig. 2 shows the claimed feature.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references is art of interest.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (703) 305-9761. The examiner can normally be reached on Tue-Fri from 6:30am to 5:00pm.

Art Unit: 2124

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (703) 305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are:

Official (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



TAN V. MAI  
PRIMARY EXAMINER